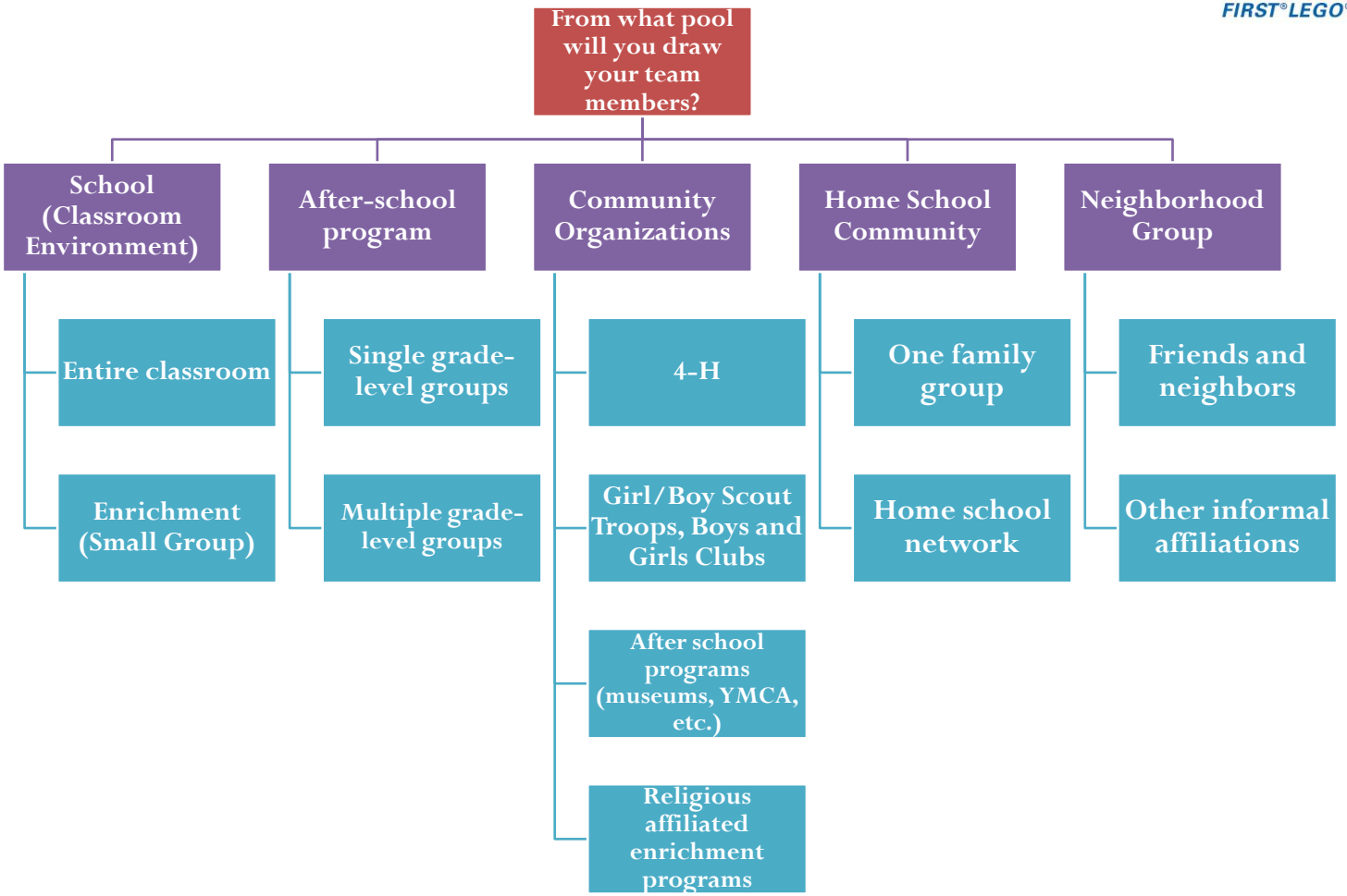
TEAM & TIME MANAGEMENT

OHIO PROGRAM

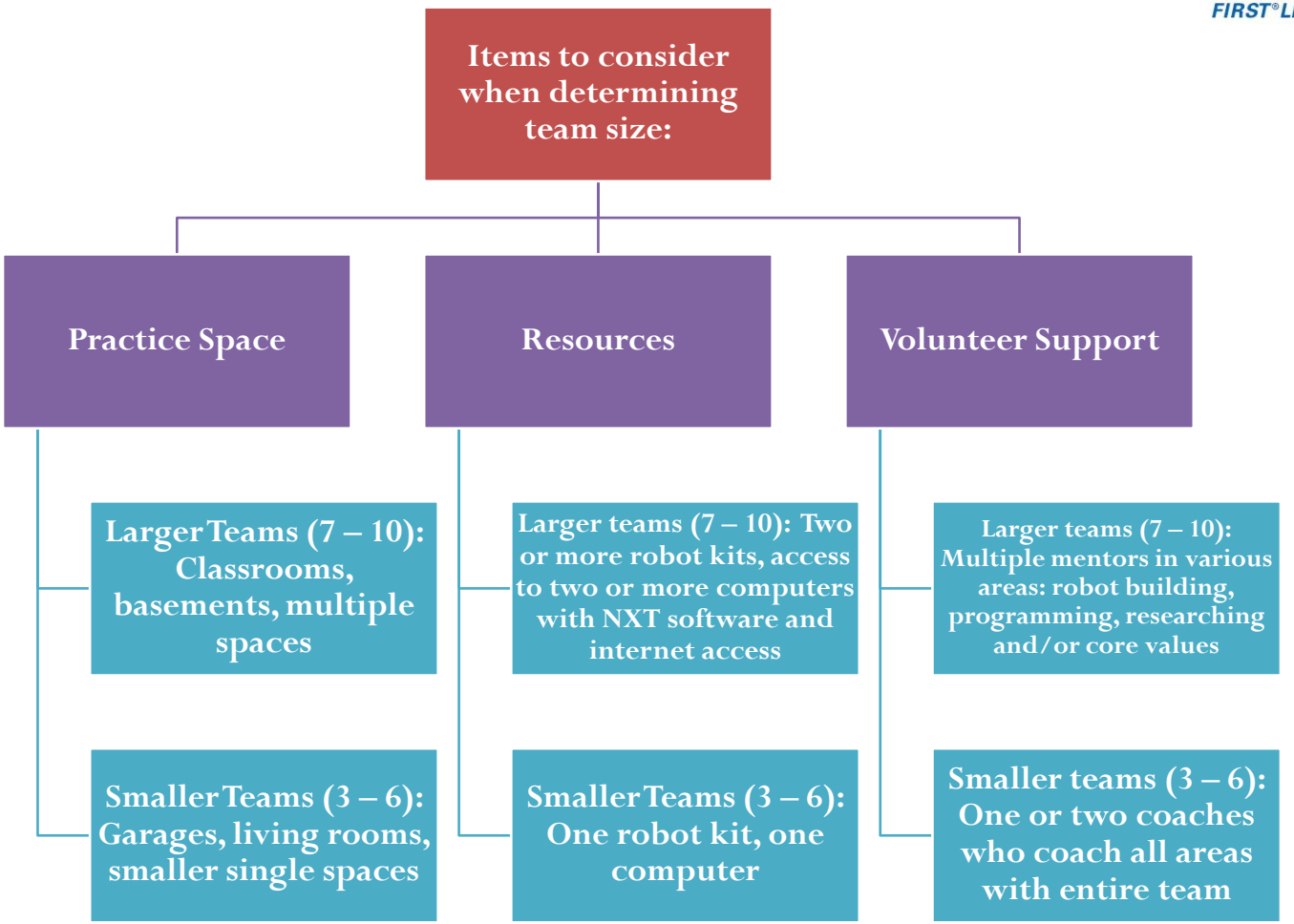
PART 1: TEAM MANAGEMENT

- Team Recruitment
- Team Rules
- Team Roles & Responsibilities
- Conflict Resolution Process
- Incorporating the Socially Challenged Child into a Positive Team Dynamic

TEAM RECRUITMENT



TEAM RECRUITMENT: 3 TO 10 MEMBERS



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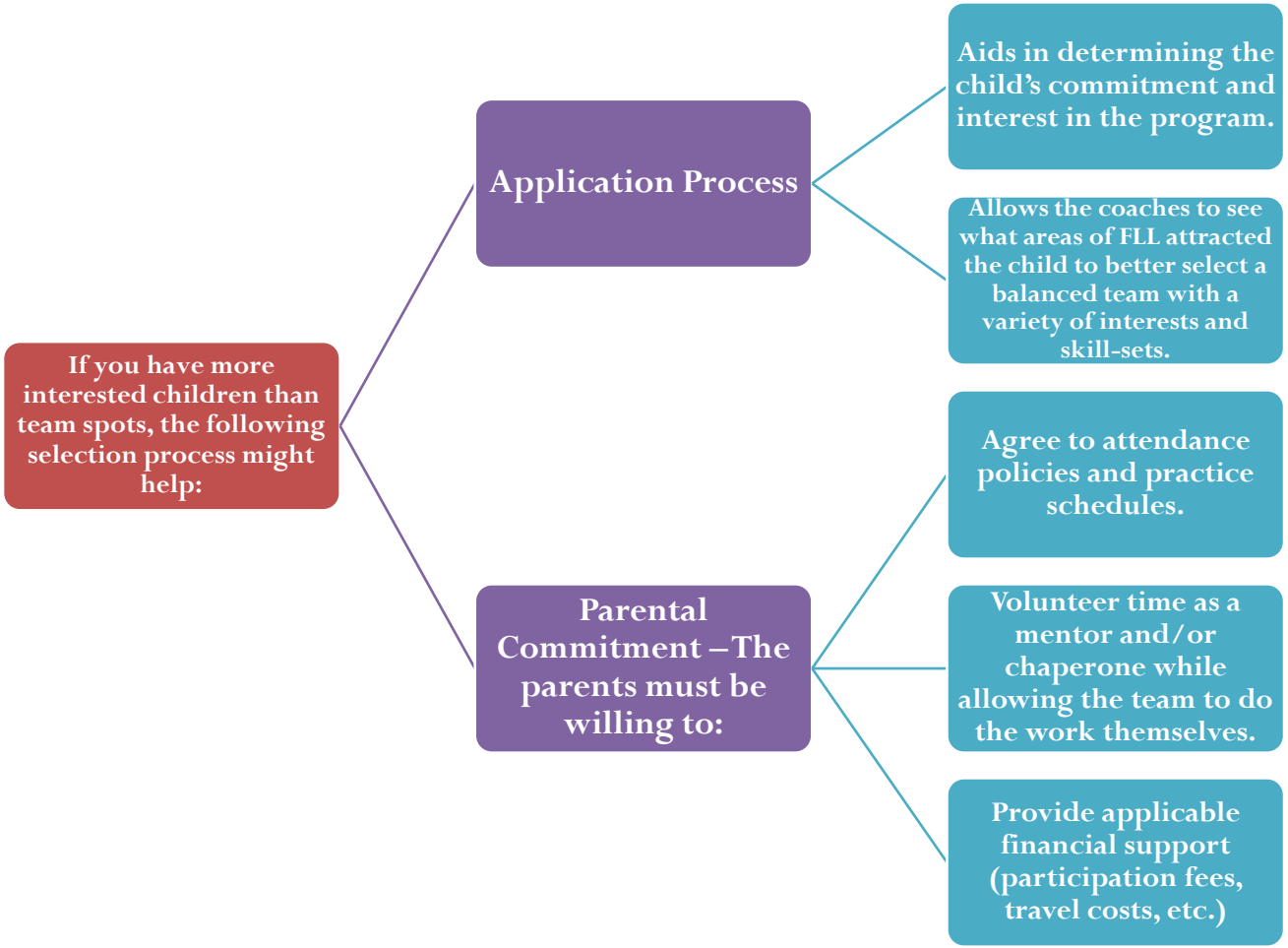


TEAM RULES

Every successful team needs to have some basic rules (or parameters) in order to function successfully.

- Outlines clear expectations for behavior.
- Outlines consequences for negative behavior.
- Makes clear to team members all team processes.

Short list so everyone can remember.

- Create short statements.
- Phrase them positively by stating the behavior you expect, not the behavior you do not want to see.
- Creative options: Your team could create a motto, a rap, a song that they could perform.

Post the list in the team work area.

- Overall list of rules.
- Option: Create a Core Values list, including words that should be spoken and words that shouldn't be spoken.
- Option: Create rules for modifying, handling, changing the robot, attachments and programming.

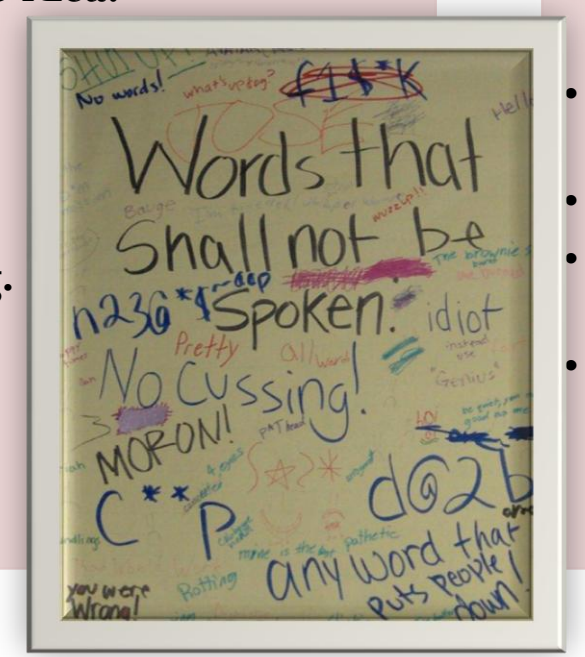
Sample rules:

- Attend Every Practice.
- Come to Practice Prepared.
- Listen to others actively.
- Follow all Robot Handling Guidelines.
- Speak & behave graciously &professionally to others.

TEAM RULES

Some teams have a list of "Words and Phrases that Shall Not Be Spoken."
(Following list courtesy of the Fossil Fuel Fighters, Loveland Neighborhood Group, 2007-2009).

- That's a dumb idea.
- Can't
- Impossible
- Shut Up
- Moron
- You're wrong.
- Stupid
- Dumb
- No Cussing!



You might want to have parents sign a contract as well. This helps to keep the families on the same page.

- Allow the kids to come up with the solutions.
- Respect the coaching process and role assignments.
- Volunteer your time to the team.
- Drop your child off and pick him/her up on time.
- Be a partner with the coaches if your child's behavior negatively impacts the team dynamic.

TEAM RULES: KIDS DO THE WORK!

Coaches/ Mentors *should:*

- Teach building skills.
- Teach the use of gears.
- Teach the mathematics that the team members will need (calculate gear ratios, light sensor threshold values, wheel radius and circumference, etc.)
- Teach good programming skills (sensor use, task splits, loops, variables, multiple threads, etc.)
- Teach good engineering processes.
- Teach the scientific method.
- Encourage! Motivate! Facilitate! Communicate!

Coaches/ Mentors should *not:*

- Build the robot.
- Build the attachments.
- Program the robot to solve specific missions.
- Come up with the mission strategies.
- Come up with the project topic.
- Decide on the project solution.
- Decide on the audience for sharing the project.
- Create the presentations.

TEAM ROLES

Decide on team roles.

Encourage each team member to acquire some leadership skills.

Encourage all to support a leader and to work together as a committee.

Role selection can be done by application, interview, team presentation, team elections, etc.

Each area leader should have planning and organizational responsibilities for each meeting.

TEAM ROLES

Team Captain	• Overall Team leader
Lead Engineer	• Lead builder, oversees robot and attachment construction
Lead Programmer	• Oversees all programming development
Lead Researcher	• Overall project lead
Presentation Manager	• Coordinates all presentation needs: media, props, costumes, etc.
Robot Operators	•Operates the robot during the competition (some teams have specific folks designated for this job, other teams have all team members doing this piece).
Engineering Journal (Configuration) Manager	•Keeps the engineering journal, documents all changes in design and programming and is responsible for configuration preservation.
Materials Manager	•Organizes all materials for meetings, including set up and tear down.
Information Manager	•Web master (if team has a website), checks "Rulings" for challenge, etc.

CONFLICT RESOLUTION

Before conflicts arise, decide on a process to solve disagreements:

Example 1: Challenge those who have different ideas to develop them into something that can be presented to the entire team (prototype or programming for the robot; sources, or complete ideas for research). Either test each person's prototype or programming, or in the case of research, discuss the key points of each idea. Have the team vote. Majority Rules.

Example 2: In the case of heated arguments, the group takes a mandatory time-out for a pre-determined number of minutes (egg timer would work well). After the time-out, the disagreeing parties come together and discuss the problem.

CONFLICT RESOLUTION

Other conflict resolution methods:

Example 3: The team could appoint a conflict resolution facilitator, who could mediate disagreements between team members. This could be the coach, a mentor or a mature team member.

Example 4: The entire team could be involved in mediating all major disagreements. The process could be to form a circle. Each person gets 3 minutes (egg timer again) to make his/her case, along with a minute to respond after everyone has been heard. Then the entire team votes. Majority rules.

CONFLICT RESOLUTION

It is important to develop a plan BEFORE conflicts arise.

Have team members sign an agreement outlining basic rules and expectations, along with consequences for breaking those rules. (Areas to address: Homework, robot handling, horseplay, missed meetings, disrespectful language, etc.)

Teach your team Active Listening techniques: repeating key elements of the other's points, not interrupting, making eye contact, giving undivided attention.

Make communication a key component of your meetings. Round table discussions encourage folks to share their frustrations and concerns. A good facilitator can get all members to share (good job for the coach).

SOCIALLY CHALLENGED CHILD

- Create Clear Expectations For Behavior.
- Create a Routine.
- Catch Each Child Doing Something "Right."
- Create and Practice the Tournament Structure.
- Utilize a Quiet Place at the Event you Attend.
- Form a Buddy System.
- Encourage Team Members to bring a "Good Luck" Item to the Tournament.
- Work with the Family.

SOCIALLY CHALLENGED CHILD

Create Clear Expectations for Behavior.

Socially challenged children function best in structured environments where cause and effect can be predicted consistently.	Post your team rules and consequences.	Follow through with consequences every time.	Document incidents and include the date and specific behaviors that caused you concern.	Engage the family early and often if you find that a child's behavior is disruptive to the team environment.

SOCIALLY CHALLENGED CHILD

Create a Routine.

The socially challenged child does better if he/she knows what to expect.	Divide your practice times routinely into segments. Example: Snack time, robot building/programming, project work, teamwork activity.	When practices do change (off-site field trip, mock judging sessions, outreach presentations, etc.), make sure you communicate those changes to the team well in advance and discuss what the children should expect.

SOCIALLY CHALLENGED CHILD

Catch Each Child Doing Something "Right."

You may find that you spend a lot of your time correcting the behavior of the socially challenged child – make an effort to praise that child for something he/she has done correctly.	Create an environment where the coaches and the team members routinely praise each other for gracious behavior.	Focus on the positive, encourage communication, and create a team environment where the feedback comes from everyone and is focused on positive outcomes.	Reward the behavior you want to see!

SOCIALLY CHALLENGED CHILD

Create and Practice the Tournament Structure.

Contact your tournament coordinator and ask how the tournament will run. Will the judging and robot competition happen simultaneously? Will the judging happen in a block during the morning?	Practice the structure of your tournament at your practices. Do mock judging sessions in front of an audience and have the "judges" ask questions.	Practice the robot competition – from the queuing process to exiting the competition area.	You are creating a familiar experience for everyone, which can lead to a less stressful tournament for the entire team.

SOCIALLY CHALLENGED CHILD

In order to have a great tournament experience, prepare by doing the following:

Find a quiet place where the team can decompress. Sometimes too much stimulation can cause unexpected behavior in the socially challenged child. A quiet place can be calming.	Encourage all of your team members to bring a "good luck" item. Socially challenged children are often tactile – they might like the feel of certain fabrics, the feel and smell of lotions or hand sanitizers, etc.	Form a Buddy System. No matter where each team member goes, he or she must go with a buddy. This allows the socially challenged child to have that companion, and it is a good safety practice for the entire team.	Be aware of food issues. Perhaps some team members have to eat frequently; some may have food allergies; others may be susceptible to food-induced mood changes.

SOCIALLY CHALLENGED CHILD

Engage the family as a partner in the process, if a child's behavior negatively impacts the team dynamic.

The family may have specific methods for dealing with behavior that work well with this child.	If the behavior does not improve, you could invite a family member to stay during the practice times to help mitigate negative incidents.	Share your concerns, including dates, times and specific details surrounding concerning behavior.

TEAM MANAGEMENT

Consider the Following to Create a Positive Team Dynamic :

Team Size:	• Based on space, material, financial and volunteer resources.
Team Member Selection:	• Based on interest and commitment of each child and the level of promised support from the parents.
Team Goals:	• At the outset, your team goals will determine the number of hours that your team will practice.
Team Rules:	• Clear rules, expectations and consequences, to which all agree when the team first forms, allows for consistency and structure.
Conflict Resolution:	• Decide on a process to resolve disputes before the team has its first disagreement.
Practice Time Structure:	• If coaches prepare for structured practices, the time the team spends together will be more productive.
Socially Challenged Child:	• The more structured, consistent and positive the environment, the better result you will get from all of the children.

PART 2: TIME MANAGEMENT

- Team Goals: Decide Early
- Team Practice Time Organization
- All Team Practice vs. Small Group Practice
- Homework
- Engineering Configuration Guidelines OR RULES OF ROBOT ENGAGEMENT!
- Engineering Journal

TEAM GOALS

What are your expectations for the season?

- To get the robot to accomplish a few tasks? Complete the research assignment? Enjoy the competition experience?
- To be a highly competitive team? To make it to the state championship or beyond? To create a project that will have a powerful impact on your community?

Once you Decide on Your Season's Goals, you can determine how much practice time to invest:

- Some teams can only practice two or three hours a week. Expect to learn some great things and have fun!
- Competitive teams practice four to eight or more hours a week!
  - Utilize practice time before school or during lunch.
  - Blocks of time on Saturday mornings or Sunday afternoons
  - All team meetings and small committee meetings as needed.

ORGANIZE PRACTICE TIME

Sample two-hour practice:

Round Table Discussion: Start with a 15 minute round table discussion. Discuss where each group is in the development process, and what each group plans to accomplish during the practice. This is a good time to bring up any problems or concerns.

1 Hour Committee Work: This can be the entire team working on a task, or this can be divided into subgroups (robot builders, programmers working the robot game; researchers, presenters working the project).

Teamwork Activity: (30 minutes) Plan for a Teamwork Activity – complete the activity and process what happened. Could the team have done better? Communicated more effectively? Integrated ideas better?

Round Table Discussion: Conclude with another 15 minute round table discussion. Committees report, determine homework, assign outside committee meetings, and plan for the structure of the next meeting. This is also a good time to bring up any problems or concerns.

TEAM PRACTICE TIME

ALL TEAM:

- Brainstorming
- Prototype testing
- Directional decision-making.
- Field trips
- Outreach
- Refinement testing
- Judging/Robot Game Practice

COMMITTEE WORK: Could Be Individual or small group

- Individual research that team members bring to the "All Team" meeting
- Design/mechanical building
- Programming
- Presentation development

HOMEWORK

It is impossible for all of the work to get done if you plan to cover everything only during meeting times. You should expect some work to be done by individuals on their own time:

Project Research:

Ask your team members to explore different research topics and report back to the team about what they have learned.

Robot Building/Robot Programming Research:

Ask your team members to research building designs and programming techniques to report back to the team.

Game Updates:

Your team will need to stay up on the latest "Rulings" on the Official FLL website.

COMMITTEE WORK

As you progress into the season, you may need your committees to meet between all-team practices to accomplish the following:

Programming development and troubleshooting (debugging)	Robot building (chassis, attachments)	Project script writing	Presentation preparation (costume and prop design and construction, media presentations, etc.)

RULES OF ROBOT ENGAGEMENT! (Sample Rules)

Changes to the Robot, Attachments or Programs can be made ONLY with Official Approval.

Every change (no matter how insignificant), must be documented. Ex. Eyedeliver_v12; Bionic Bot Design 2.

At the end of every meeting, all robot programs should be saved on a backup CD and stored with the Engineering Journal.

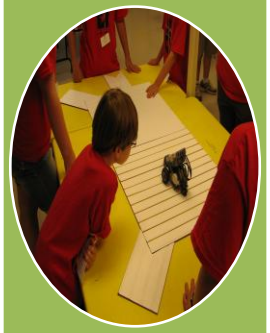
All changes/modifications/updates will be recorded in the Engineering Journal with all appropriate descriptions, photos and test results.

ONLY change *ONE THING AT A TIME!!!*

ENGINEERING DESIGN PROCESS: JOURNAL TO DOCUMENT PROCESS

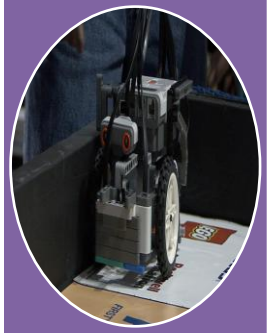
DESIGN GOALS (DEFINE PROBLEM)

What design do you need? Strong? Fast? Tall? Narrow? Treads? Wheels? What Sensors? Light? Touch? Rotation? What Attachments? Grippers? Loaders? Hooks?



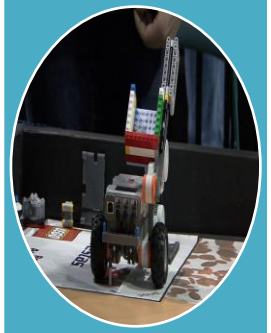
PROTOTYPING (MAKE AND TEST MODELS)

Build and test basic chassis. Use test course (uneven surfaces, inclines, drop tests, etc.)



PRLINIMARY DESIGN REVIEW

Finalize initial design. This is the robot base that will go into the refinement phase.



REFINEMENT (REDESIGN & TEST AS NEEDED)

Modify only one thing at a time. If the design is not working, the team can always go back to earlier phases in the design process.

CRITICAL DESIGN REVIEW

Finalize the design, programming and attachments. The design, programming and attachments should work together consistently and as expected.

JUDGING

Communicate the final product to your judges!

ENGINEERING JOURNAL: Brainstorm Design Goals

What kind of Robot do we need?

- Strong/Fast
- Tall/Short
- Narrow/Fat

What Sensors could we use and how would we use them?

- Light: line following/line recognition
- Touch: wall finding/wall following/attachment activation/new program strand activation
- Ultrasonic: wall finding/mission model locator

What kind of Drive Train do we need?

- Wheels/Treads/Skids
- Four wheels? Castor wheel?
- Differential? Direct steering?

What missions could be combined?

- Are there missions that are close to each other?
- Could multiple missions be completed by using the same tool or attachment or by using the same sensor?

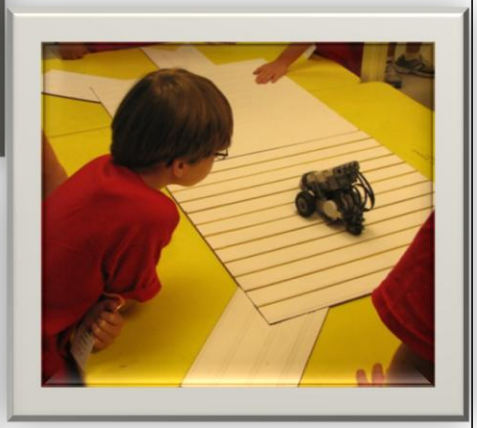
What kinds of Attachments or Tools would work on different missions?

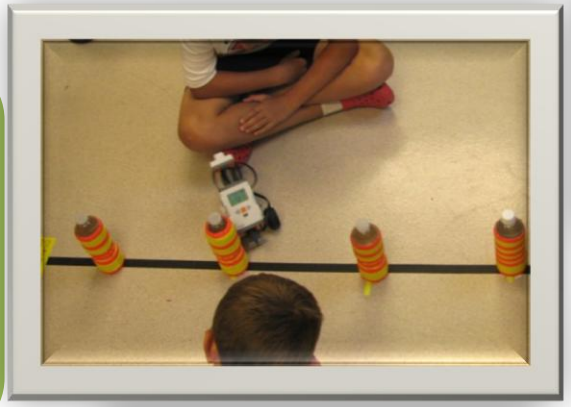
- Grippers
- Loaders
- Hooks
- Sensor housings

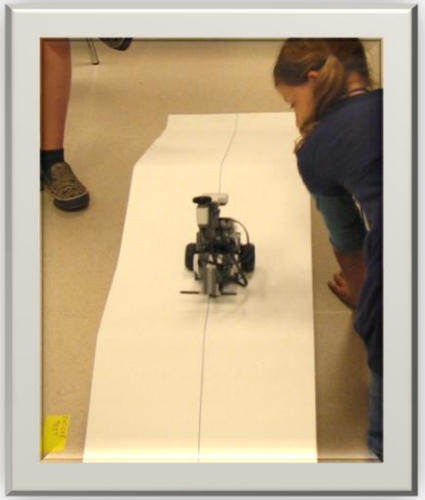
What missions seem to be the easiest?

- Do the easiest missions first.
- Look for missions close to Base.
- Allows your team to build confidence.

Engineering Journal: Prototyping







Create your Robot Chassis based upon the Design Goals.

Test your prototype.

- Does it move straight?
- Can it maneuver?
- Is it robust?
- Is it strong?
- Is it fast?
- Does it meet design requirements?

ENGINEERING JOURNAL: REFINEMENT

Now that you have your basic robot chassis:

Only Change ONE THING AT A TIME! Change the name when you make a change (number system).	Document HOW the robot or attachment or program was changed and record the result of that change.	Use descriptions and photos.	Record results of all testing.	Save programs on a CD and include the date. Keep with Journal.	The goal is to move forward – never backward!

ENGINEERING JOURNAL: ADVANTAGES

It allows you to track your process.

It emphasizes documentation and accountability to the process.

It creates a record of your engineering process, which will be a great tool when you prepare to meet with your Robot Design Judges!

This will SAVE YOU TIME! And time is a premium when your team has so much to prepare in a small amount of time.

TEAM & TIME MANAGEMENT

FINAL CONSIDERATIONS FOR A SUCCESSFUL & FUN SEASON: